

THE
CITY OF SUNNYVALE

BICYCLE

PLAN

- 1993 -



ACKNOWLEDGEMENTS

Thanks to the cities of Palo Alto, California, Boulder, Colorado, Eugene, Oregon and Portland, Oregon for granting permission to use text and graphics from their bicycle maps.

—*Rebecca Robinson*

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The City of Sunnyvale strongly supports the wearing of helmets for all bicyclists. The graphic images used in this report do not always reflect this policy because of the dated nature of the clip art. The City would like to emphasize that it advocates the wearing of bicycling helmets for all bicycling trips, no matter how short.



EXECUTIVE SUMMARY:

MISSION STATEMENT

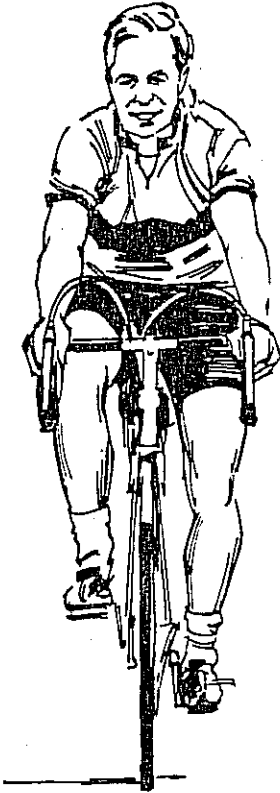
The goal of the Bicycle Plan is to encourage bicycling at the local, subregional and regional levels. Safe and accessible bicycle and shared roadway facilities will help clean up the air, reduce traffic congestion and preserve our natural resources. At the local level, this goal can be accomplished by maintaining a system of bike-ways which is safe and accessible while balancing the needs of all segments of the bicycling community. At a sub-regional level, this can be accomplished through participation in traffic congestion reduction programs which are occurring throughout the County and Bay Area and by encouraging linkages between bicycle facilities in South Bay cities. The City of Sunnyvale will continue to encourage bicycling for recreational, commuting, school and shopping trips.



INTRODUCTION

In the seven years since the original Bicycle Plan was written, bicycling has grown in popularity while the needs of different segments of the cycling community have become more specialized. For example, in the South Bay area in 1990, 37% of the population rode a bicycle at least 6 times a year, significantly exceeding the national average of 25%. Changes in bicycle technology and the increased numbers of recreational cyclists alone have put demands on Sunnyvale's bicycle transportation system. When the desires of different cycling groups are added to the picture, a situation of conflicting needs sometimes occurs.

This Plan will present a program of goals, policies and action statements which attempt to balance the needs of each of the various cyclists groups. Special emphasis is placed upon planning for bicycle facilities and upon safety and education programs. The accompanying map presents a ranking system of the skill levels needed to ride on Sunnyvale's streets and roads, superimposed upon the City's bike paths, routes and lanes.



PURPOSE

Although not a part of the General Plan, the Bicycle Plan is consistent with and implements action statements of the Transportation Element which calls for preparation of a formal bicycle plan.

The Bicycle Plan is presented in two sections. The first, Community Conditions, describes Sunnyvale's current bicycling facilities, safety and education programs and accident statistics. The second consists of goals, policies and actions statements which will provide a roadmap of decision-making for bicycle facilities in Sunnyvale during the 1990's.

MAJOR FINDINGS – COMMUNITY CONDITIONS

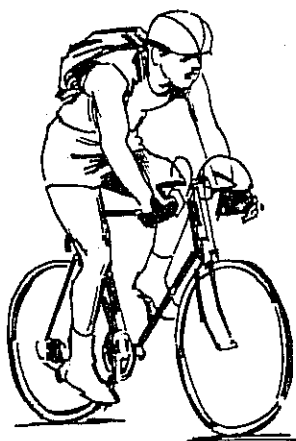
- There are 2.6 miles of bicycle paths in the City, 15 miles of bicycle lanes and 4.6 miles of bike routes (counting in one direction).
- Sunnyvale's bicycle path follows the Hetch-Hetchy water line easement, stretching between Lakewood Village and Orchard Gardens Park in northeast Sunnyvale. Although mostly unimproved, portions of the path have been planted by adjoining residents.
- There is very little vacant land left for new development of any sort, whether for automobile or bicycling facilities. Bicycle and shared roadway facilities are currently created or upgraded mostly through redevelopment, street widening and repairs.
- Between 1984 and 1991 there were an average of 93 bicycle accidents per year.

CITY PROGRAMS

- The City Council passed a resolution in early 1991 stating that where feasible, space for bicycles would be created in any new development or redevelopment project. The City Council also adopted a policy to design and maintain bicycle and shared roadway facilities according to the latest Caltrans standards.
- In 1991 the City instituted a policy to install road pavement loop detectors which detect bicycles waiting at an intersection.

The loops are being installed as redevelopment, road widenings or repairs occur. Eventually, all the intersections in the City will have loop detectors which are sensitive to most bicycles.

- As a result of a study completed in 1990, Sunnyvale has recently begun modifying the location of some of the bike signal push-buttons near right turn lanes or replacing them with detectors. This should improve bicyclist safety by reducing conflicts with right-turning automobiles.
- The City's Parks and Recreation Department has bike rodeos for elementary school children which are both fun and instructional.
- The Public Safety Department and the Sunnyvale School District sponsor the "Safe Way to School" program, a general safety education program for kindergarten through third grades.
- Public Safety puts on the annual Bicycle Safety Program for every 4th, 5th and 6th grade school child in the City. During fiscal year 1991, 3,200 children were taught advanced bicycle safety principles.
- Public Safety also has the Juvenile Traffic Safety Diversion Program, which is designed to reduce juvenile injury accidents involving skateboards, bicycles and pedestrians. In 1990-91, there were 557 first time offenders but only 41 second time offenders. In 1991-92 to date, there have been 313 citations and only 9 repeat offenders.



REGIONAL PROGRAMS

- Santa Clara County now allows bicycles on all County expressways.
- The Santa Clara County Transportation Agency has recently begun a program to carry bicycles on all 81 bus routes and the light rail system, 7 days a week, passenger loads permitting.
- The Congestion Management Agency (CMA) is a legislatively mandated, inter-jurisdictional body whose members represent the cities and county of Santa Clara County. One of the primary goals of the CMA is the reduction of drive-alone com-

muting through Transportation Demand Management (TDM) programs. The TDM Ordinance, which was adopted by the City of Sunnyvale, contains employer-based trip reduction strategies such as ridesharing, bicycling and the use of transit.

- Santa Clara County's T-2000 and T-2010 planning documents provide support for bicycling as an alternative to solo commuting and set a number of ambitious goals for bicycle and shared use facilities in Santa Clara County.

GOALS & POLICIES

Statement of Purpose – Sunnyvale shall encourage the usage of bicycles for transportation and recreation, to minimize air pollution, energy consumption and traffic congestion.

Goal BP.A **Cycling for recreation, commuting and travel to school and shopping shall be encouraged.**

Policy BP.A1: The City of Sunnyvale shall facilitate bicycling through its transportation planning process.

Policy BP.A2: The City shall facilitate access of bicycles to buses, light rail and heavy rail and improve linkages among different transportation modes.

Policy BP.A3: Develop means of accommodating bike access at special facilities such as parks, flood control districts, utility facilities and other institutional uses.

Policy BP.A4: Study alternatives for improving linkages between employment and residential areas.

Goal BP.B **Provide for and maintain a safe and effective system of bikeways and shared roadway facilities suitable for bicycles.**

Policy BP.B1: Design a program to maintain roadways and bikeways suitable for bicycle use.

Policy BP.B2: Consider cycling needs in future roadway projects.

Policy BP.B3: The City shall pursue all available funding options for bicycle facility construction and improvements.

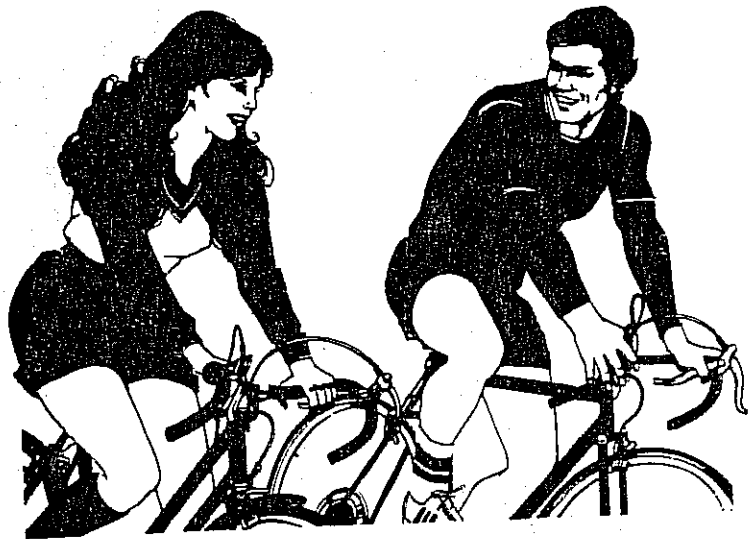
Policy BP.B4: The City's new and existing bikeways shall conform to the latest Caltrans bicycle criteria per Caltrans Highway Design Manual, January 1987, fourth edition.

Goal BP.C Make provisions for education about the rights and responsibilities of cyclists and motorists.

Policy BP.C1: Establish an effective bicycle education program for all our citizens.

Policy BP.C2: Study the expansion of bicycle education and safety programs to include other segments of the public.

Policy BP.C3: Provide enforcement related to the rights and responsibilities of bicyclists.







SECTION I

INTRODUCTION

After a short description of existing community conditions, the Bicycle Plan will be presented in a series of "goals, policies and action statements" which clearly lay out the Bike Plan goals and the steps needed to achieve them. Many of the goals from the previous Bicycle Plan have already been accomplished and are being implemented on an on-going basis. Since creation of the original Plan, new goals have emerged along with a number of City programs to accomplish them. This Plan will describe how the City will meet the new goals it has established.

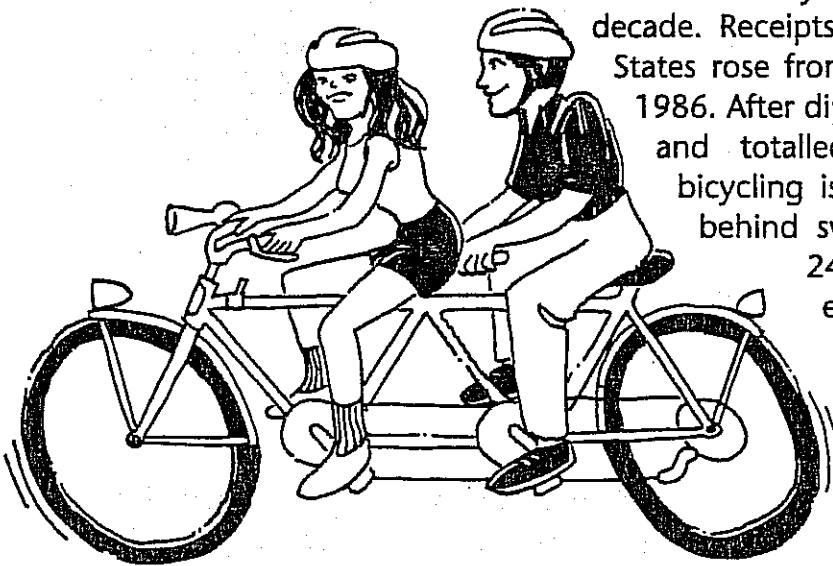
Bicycling in the City of Sunnyvale is a pleasurable pastime which has become very popular in the past few years. Bicycling is also a way of life for those who commute by bicycle to work. Sunnyvale residents made an estimated 2% of work trips by bicycle in 1980, a statistic which promises to be even higher in the 1990 census (data not yet available). And with reductions in neighborhood bus service in this era of tight budgets, bicycling is the fastest and easiest way for many children to get to school.

In the seven years since the last Bicycle Plan was written (1984), the needs of the bicycling community have become more specialized due to increases in the numbers of recreational users, changes in bicycle technology, and the increased numbers of children riding bicycles to school. The three general categories of bicycle users whose needs will be addressed in the Bicycle Plan are 1) Recreational cyclists of all ages; 2) Commuter cyclists; and 3) Child cyclists. These categories are not meant to be all-inclusive or exclusionary – they are merely a simplified grouping of the major types of cyclists.

Clearly, the needs of these three groups overlap. However, sometimes they conflict – what may be important for the child cyclist may not be important for the commuter cyclist, and vice versa. The balancing of each groups' needs is a goal of the Bicycle Plan, as is the creation of an overall transportation system which will be safe and accessible for bicyclists.

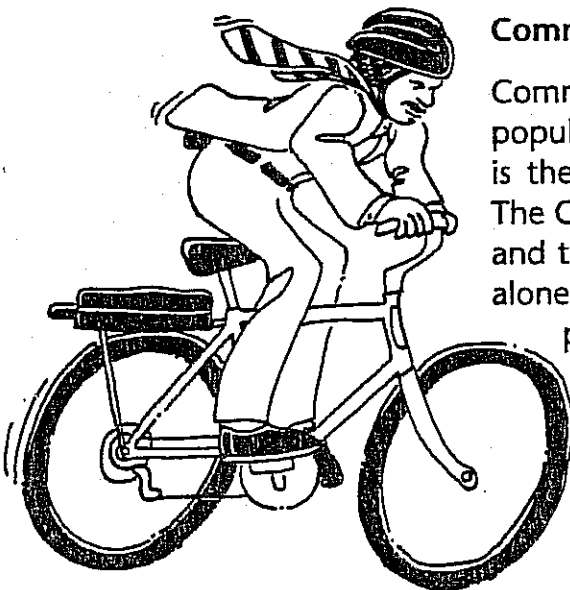
Recreational Cyclists

Recreational bicycling has grown astronomically in the last decade. Receipts from sales of bicycles across the United States rose from \$656 million in 1982 to \$1.1 billion in 1986. After dipping slightly in 1988-89, sales are back up and totalled \$1.2 billion in 1990.¹ Nationwide, bicycling is the third most popular sporting activity behind swimming and exercise walking. In 1990, 24.6% of the population age 7 and older engaged in bicycle riding 6 or more times per year.² Because Sunnyvale's mild climate and flat terrain encourage recreational cycling, an important part of Sunnyvale's bicycle program is the creation and maintenance of bikeways and shared roadway facilities which are safe and pleasant to use.



Commuter Cyclists

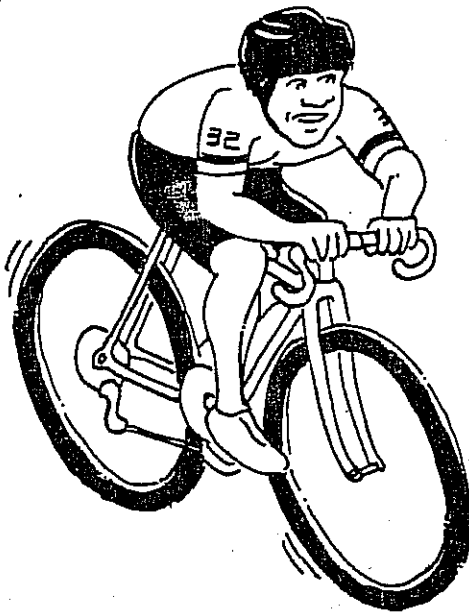
Commuter cyclists are an important segment of the bicycling population. One of the regional agencies which promotes cycling is the recently-formed Congestion Management Agency (CMA). The CMA has several goals, including the reduction of air pollution and traffic congestion and promotion of alternatives to the drive-alone commute. Bicycling to work is important to the accomplishment of these goals. County-wide site design guidelines for worksites have not yet been adopted. If adopted, they should include requirements for bike paths, bike storage, showers, clothes lockers and bicycle-friendly designs. These requirements will help bicycle commuting become safer and more attractive. The City of Sunnyvale is committed to supporting the needs of the bicycle commuter.



The City of Sunnyvale is also committed to encouraging to use of bicycles for all other kinds of trips including shopping and running errands. The City is working on the development of bicycle parking requirements for commercial businesses based on the size of the business and type of commercial activity.

Child Cyclists

For many school-age children, bicycling is the fastest and easiest way to get to school. It is also a convenient way to get to parks, to go shopping, and to visit friends. Children should be encouraged to use their bicycles, but only in a responsible manner. One of the challenges of Sunnyvale's bicycle education program is training children to use the City's bikeways and roadways safely. Public Safety has the "Safe Way to School" and bicycle safety programs which reach Sunnyvale's elementary school-age children.



COMMUNITY CONDITIONS: Existing City Programs

COUNCIL RESOLUTIONS

The City Council passed a resolution in early 1991 stating that where feasible, space for bicycles would be created in any new development or redevelopment project, including street widenings or modifications. This could include bicycle and shared roadway facilities such as bike lanes and extra wide outside lanes to accommodate bicycles. The City Council also adopted a policy to design and maintain bicycle and shared roadway facilities according to Caltrans standards for bicycles.

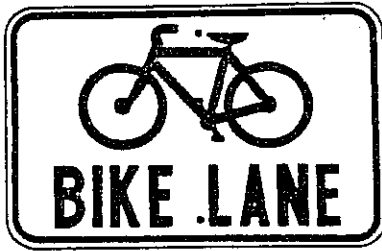
There are three different types of formalized bicycle facilities in the City of Sunnyvale: paths, bicycle lanes and routes. Each has a separate function and a distinct legal definition which has been established by Caltrans.

Bike Paths (Class I Bikeway)

Bike paths are separate from the street right-of-way, and are generally designated for use by pedestrians and bicyclists. Paths are a minimum of 8 feet wide and are mainly intended for recreational use, but may be used for commuting or riding to school. The bike path sign is used to restrict access to only bicyclists and pedestrians. There are 1.7 miles of bicycle paths in the City (counting in one direction).

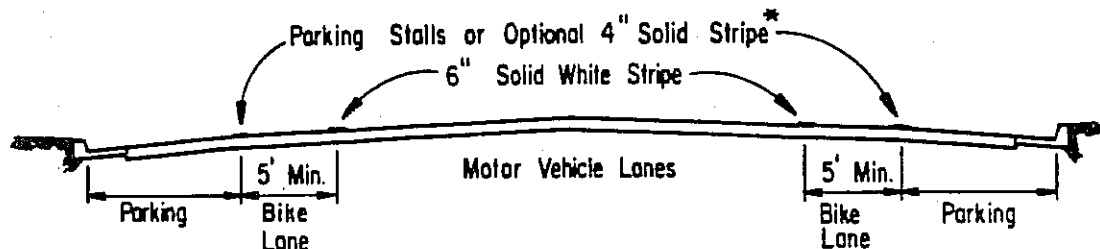


Bike Lanes (Class II Bikeway)



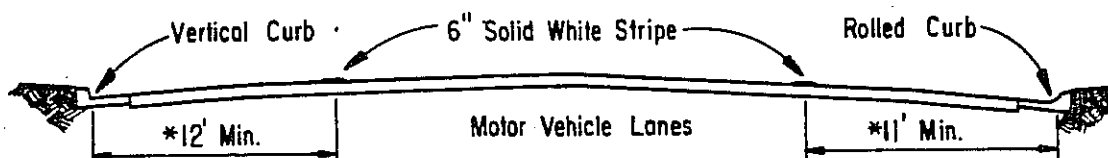
A bike lane is a lane exclusively for the use of bicycles which is located within the street. Sunnyvale is committed to designing and maintaining bike lanes which meet Caltrans standards (see illustrations below). Lanes are marked by a 6 inch solid white line which changes to a broken line 200 feet before an intersection. The broken line indicates to motorists and cyclists that vehicles will merge into the bike lane to turn right at the intersection. Lanes

Typical Bike Lane Cross Sections (On 2-lane or Multilane Highways)



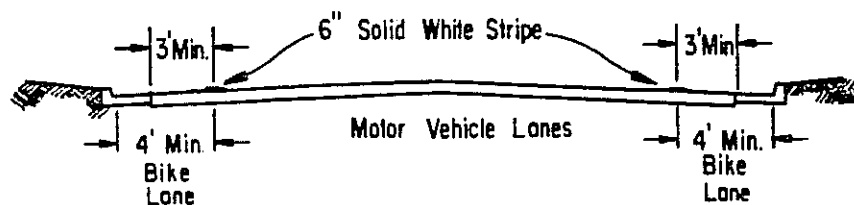
* The optional solid white stripe may be advisable where stalls are unnecessary (because parking is light) but there is concern that motorists may misconstrue the bike lane to be a traffic lane.

(1) STRIPED PARKING



* 13' is recommended where there is substantial parking or turnover of parked cars is high (e.g. commercial areas).

(2) PARKING PERMITTED WITHOUT PARKING STRIPE OR STALL



(3) PARKING PROHIBITED

Source: Caltrans Planning Manual, January 1987
(Standards as of January, 1987)

are also marked with a special standardized sign recognized by the bicycling community and adopted by Caltrans. There are 15 miles of bicycle lanes (counting in one direction).

Bike Routes (Class III Bikeway)

A bike route designation is used along streets which have capacity to carry bicyclists in the street right-of-way alongside motor vehicles but which do not have formally striped bicycle lanes. Residential collectors such as Mary Avenue are the best type of streets for bike routes. Bike routes are also designated by a special sign. There are 4.6 miles of bike routes provided by the City (counting in one direction).





If you have any information regarding roadway obstructions or hazards, or if you would like additional copies of the Sunnyvale Bicycle Map, call the City of Sunnyvale Public Works Department at (408) 730-7415.

STREET SUITABILITY RATING FOR BICYCLE MAP

MAP REFERENCE	RATING (DIFFICULTY)	DESIGNATED STREETS	CYCLIST SKILL LEVEL DEFINITIONS
Green	BEGINNER/ NOVICE (Easy)	Low traffic volume streets with speeds generally no higher than 30 mph. Only major intersections controlled by signals. Medium volume traffic with wide outside lanes. A few easy access neighborhood streets adjacent to or connecting more difficult streets.	Individuals with limited competency in cycling ability and some knowledge of safety rules and the rights and responsibilities of cyclists and motorists.
Blue	INTERMEDIATE (Medium)	Through streets with high traffic volume and speeds up to 45 mph. Intersections controlled by signals. High volume streets with wide shoulders. Medium volume streets with widths too narrow for cars and bikes to pass comfortably.	Individuals knowledgeable of the safety rules and responsibilities of the road and generally someone who uses the bicycle for transportation 10 – 50 miles during a normal week.
Orange	ADVANCED (Difficult)	More difficult streets with maximum speeds of 50 mph. High volumes of traffic. Intersections controlled by signals. Usually narrow lane widths for bicyclists. Proposed for experienced riders only.	Individuals thoroughly informed and knowledgeable of all safety rules and responsibilities of the road. Typical of cyclists who are capable of riding on major roadways and in high traffic volume with very little difficulty. Includes those who use the bicycle as a mode of transportation in excess of 50 miles per week.

UNDESIGNATED STREETS:

- Local internal neighborhood streets bounded by collector and arterial roadways with low traffic volumes. These roadways are suitable for cyclists of all abilities (including beginners).
- Freeways not designated by color, with high traffic volumes and high intensity. Where legal to operate bicycles, traffic conditions are inappropriate for all but the most competent cyclists.

SUNNYVALE'S BICYCLE MAP:

Street Suitability Ratings

The Bike Map which accompanies this Plan includes a description of Sunnyvale's bicycle facilities with their location and their "suitability rating." In addition to showing lanes, paths and routes, the City wanted to provide a map which gave cyclists a way to evaluate various routes across the City regardless of the presence of a bike lane or route. Arterial, collector and selected smaller streets received a suitability rating. All other smaller streets were judged to be appropriate for all cyclist skill levels.



The suitability rating ranks the streets for the bicycle rider's skill level (see description on page 18). The recommended skill levels are based upon a comprehensive survey of traffic volume, street capacity, lane widths and speeds originally conducted for the first Bicycle Plan in 1984. In addition, the Sunnyvale Bicycle Advisory Committee (BAC) revised the Bicycle Map in 1993. The range in skill levels goes from beginner/novice, shown in green, to advanced, shown in orange. The cyclist should make a decision about which street to use based upon his or her skill level, the time of day, weather, length of trip, etc. The map is periodically updated to reflect construction of new facilities, changes in conditions, evaluation of new information or changes in policy, such as cyclists being allowed on County expressways.

RECREATIONAL CYCLING FACILITIES

In addition to the fifteen miles of bicycle lanes which can be used by recreational cyclists, the City of Sunnyvale has a number of parks easily accessible by bicycle. Although City policy currently restricts bicycle riding within most Sunnyvale parks, staff will be investigating on a park-by-park basis the feasibility of bike riding through City parks. Staff will study:

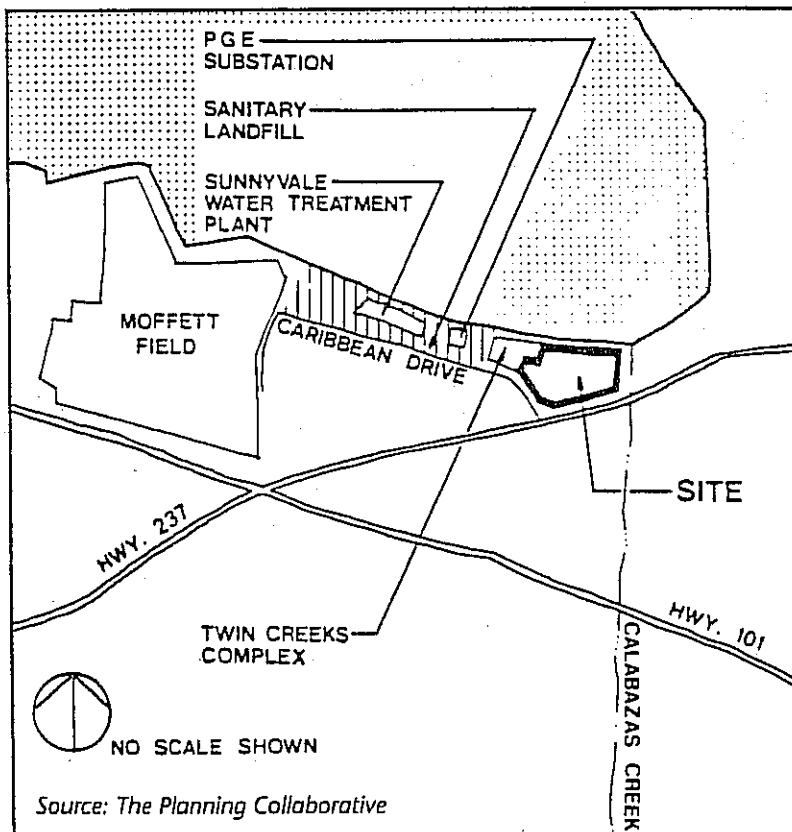
- the interconnects through parks for cyclists travelling across them to reach other destinations; and
- the addition of amenities for cyclists inside parks.

The Department of Parks and Recreation will be working with Public Works on this study of how to improve recreational facilities for cyclists.

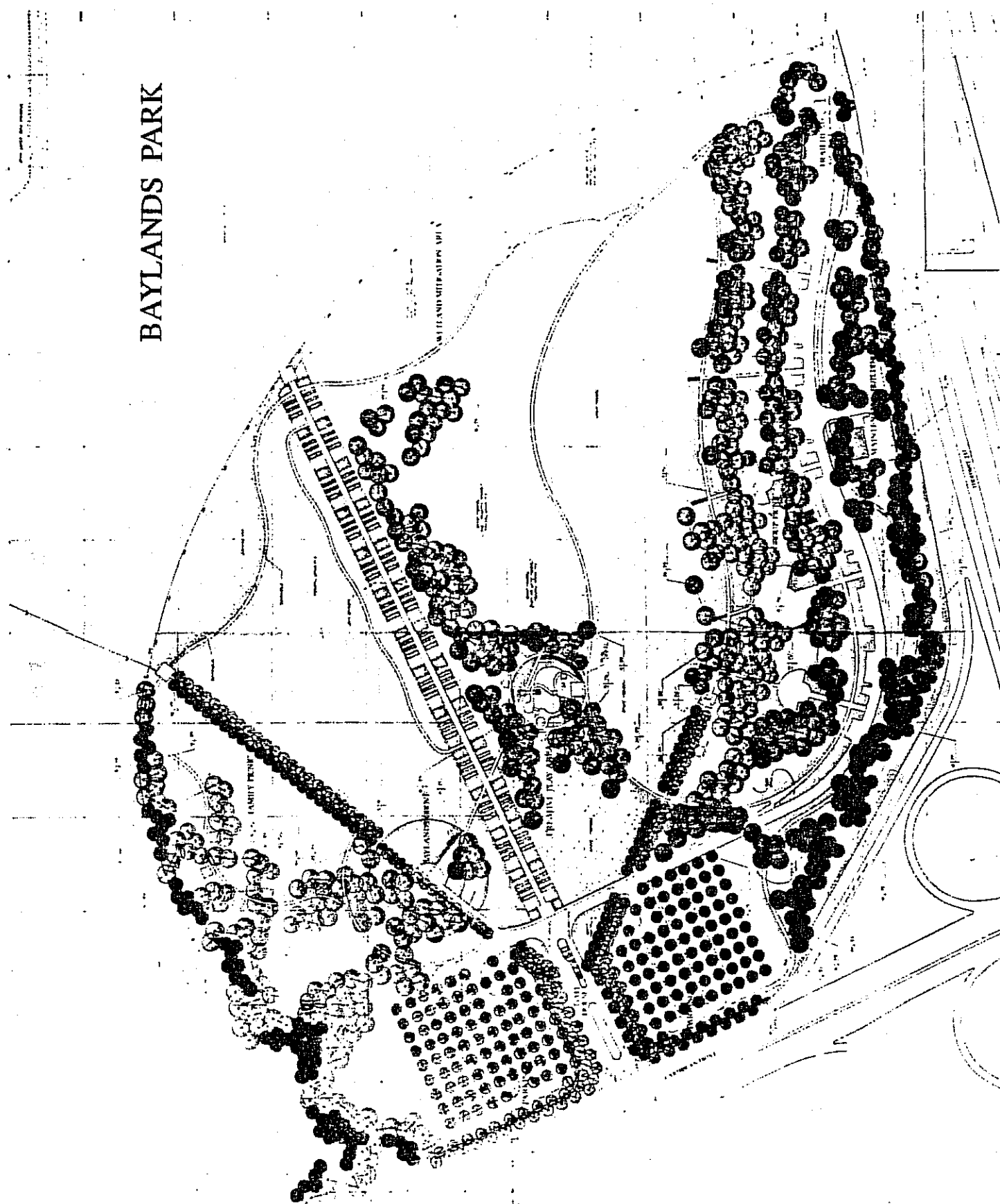
Sunnyvale Baylands Park

Within the next few years, the north side of the City will get a new recreation facility in the form of the Baylands Park, the most significant new park to be developed by the City in the past decade. Sunnyvale has been working with Santa Clara County for 10 years to develop the park, which is on the north side of Sunnyvale between the Twin Creeks Sports Complex and Calabazas Creek.

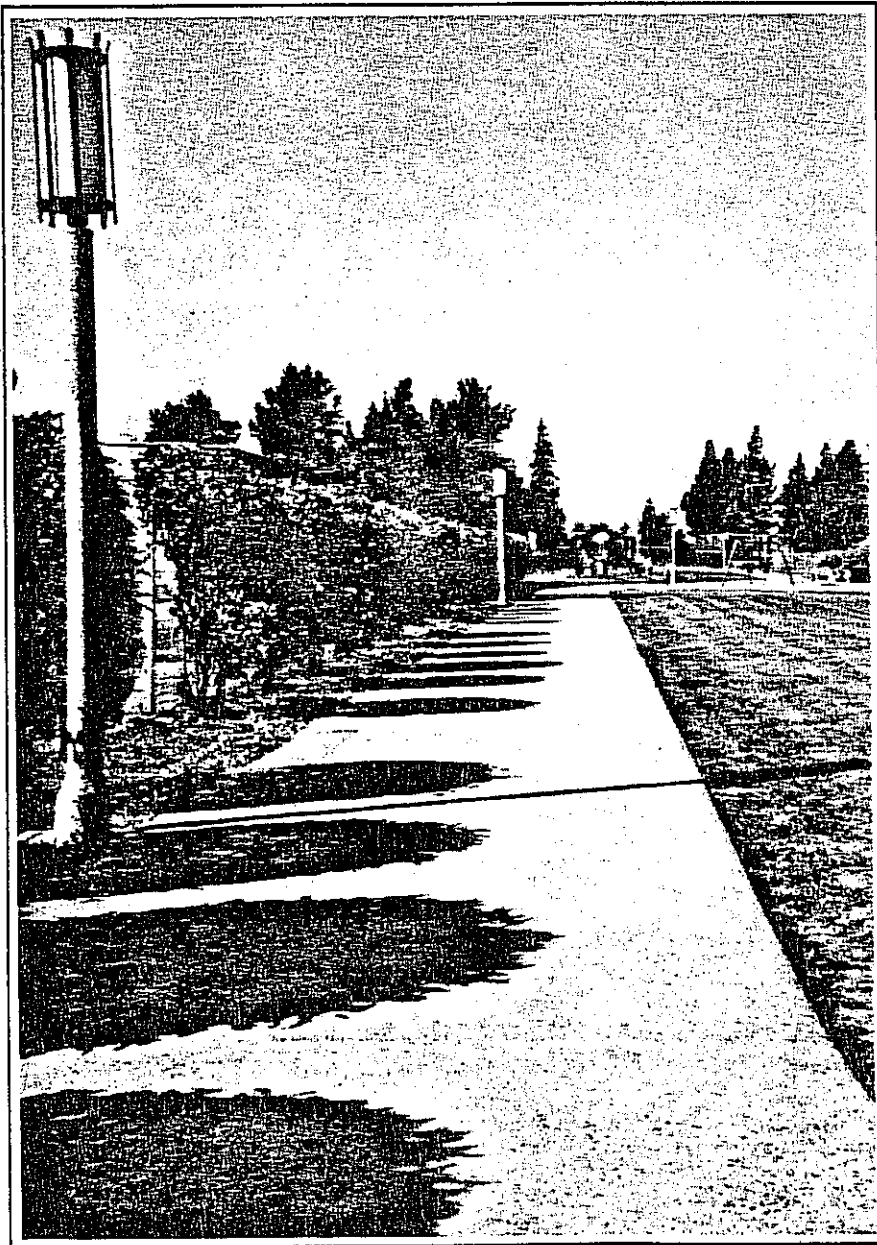
A 177-acre parcel, the park will be developed on 72 acres while the remaining 105 acres are maintained as wetlands. The park



BAYLANDS PARK



will serve as a staging area for the existing bike trails on the levees to the east, and when it is completed, for the San Francisco Bay Trail project. There will be bicycle access to and around the edge of the park, but bikes will need to be walked within the park for pedestrian safety. The City will be studying the feasibility of establishing a continuous route to the park from the residential areas south of Highway 101. The park is scheduled for completion in August 1993. When finished, it promises to be one of the premier recreational areas of the South Bay.

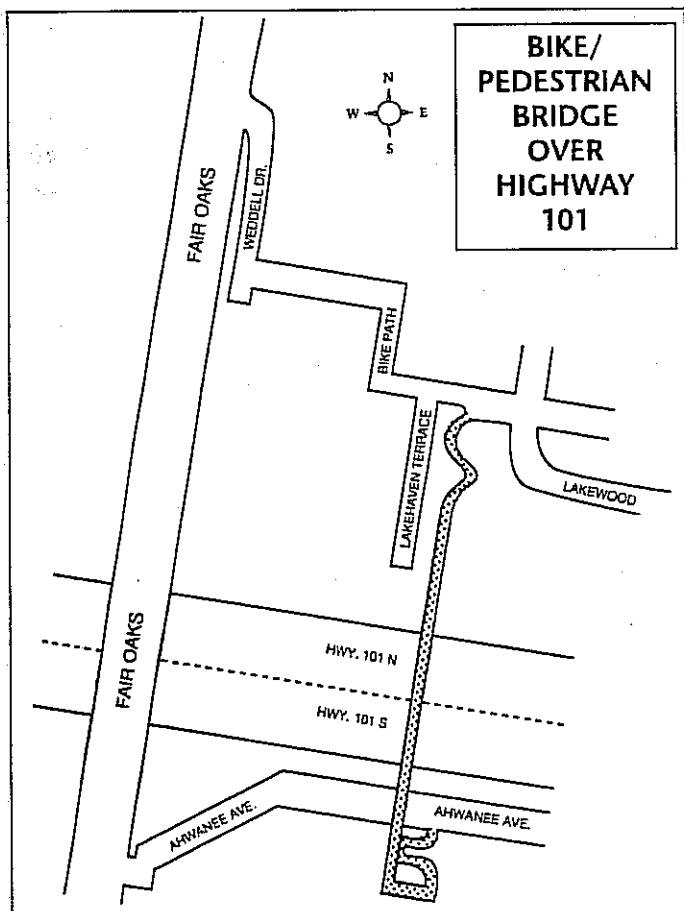


Hetch Hetchy Bike Path

The Hetch Hetchy water line easement was used for the creation of Sunnyvale's first bicycle path, which is 11.5 feet wide and stretches 2.6 miles between Fairwood School and Orchard Gardens Park just north of Highway 101. Although mostly unimproved, portions of the path have been planted by adjoining residents. The Parks and Recreation Department has plans to improve the Fairwood School property and the adjoining bike path. There are also plans to incorporate a piece of City land on Morse Avenue into the trail system. The path provides a pleasant place to jog, bicycle or walk. It is maintained by the Parks and Recreation Department and is swept about once a month.

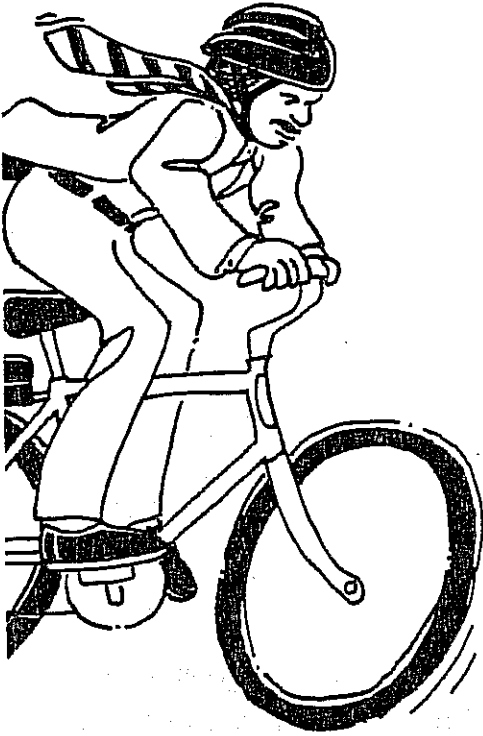
COMMUTER CYCLIST FACILITIES: Physical Infrastructure Constraints

Sunnyvale grew so rapidly just prior to 1980 that in some areas the roadway system has been strained to its capacity. This is one of the reasons that Sunnyvale and numerous other agencies are working to reduce traffic congestion and air pollution by encouraging alternatives to drive-alone commuting. One of the alternatives is cycling to work. Safe and accessible bikeways and shared roadway facilities are important goals of the Bicycle Plan.



There are several physical impediments to the construction of new bike lanes and paths in the City. There is very little vacant land left for new development of any sort, whether for automobile or bicycling facilities. To complicate matters even further, Sunnyvale is crisscrossed by a number of physical barriers which make north-south access difficult, particularly Highways 237 and 101, Central Expressway and the Southern Pacific railroad tracks. Access is especially difficult for bicyclists and pedestrians, who are often required to use bridges and underpasses which were originally designed for automobile traffic only. Currently there are three pedestrian and bicycle bridges in Sunnyvale which provide safe crossings of Highways 101 and 85, and Lawrence Expressway. (See illustration at left for Highway 101 bridge). The City is working to improve the signage to these bridges.

Although commuter cyclists have a choice of several north-south streets which lead from residential areas to the employment areas north of Highway 237, the streets are only recommended



for advanced riders because of the speed and intensity of traffic. In addition to the heavy volume of traffic on the streets, on-street parking and narrow lanes make bicycling difficult for all but the most skilled riders.

Although the pattern of streets and roads is essentially set, redevelopment, street widenings and repairs do occur, and it is mostly through these opportunities that bicycle and shared roadway facilities are currently created or upgraded.

Improving the linkages between the employment and residential areas in Sunnyvale is a goal of the Bicycle Program. City staff will be studying alternatives for improving access by:

- examining utility rights of way, flood channels and other linear parcels for construction of separated bicycle facilities; and
- studying options to provide more space for cyclists along major north-south streets such as Mathilda, Wolfe, Fair Oaks, and Lawrence Expressway.

These studies will include assessment and comparison of the projects' costs and impacts. Feasible improvements would be proposed in the Capital Improvements Plan.

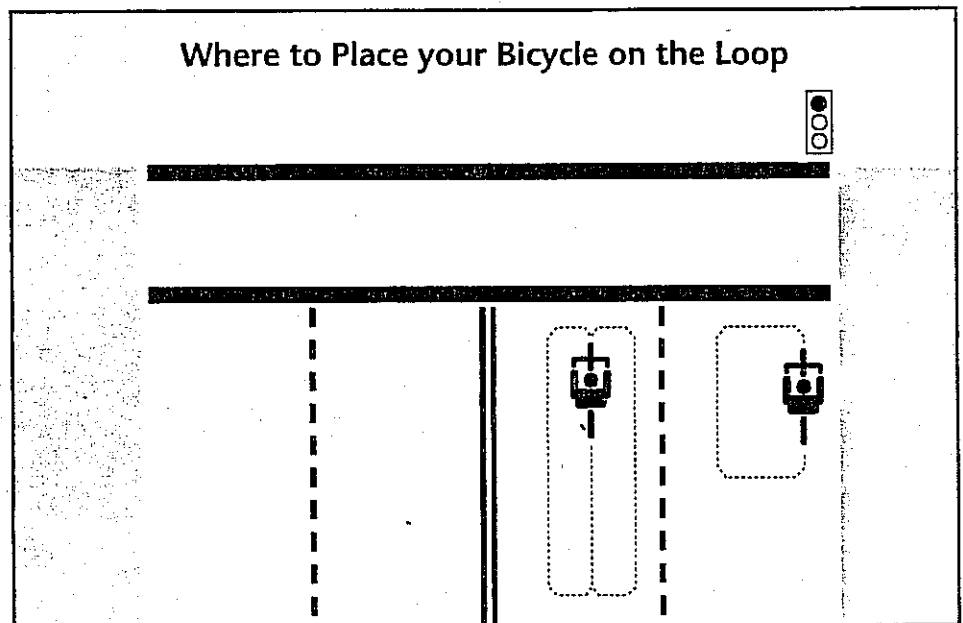
Staff will also investigate the possibility of selectively allowing exceptions to the existing City ordinance which prohibits adults from riding bicycles on sidewalks. There are some locations in Sunnyvale where a combination of narrow auto lanes, conflicting turning movements and bus stop locations, for example, creates a difficult situation for cyclists. Staff will investigate specific locations where it may be preferable to allow cyclists to use sidewalks than to use existing roadway facilities.

BICYCLES AND TRAFFIC SIGNALS

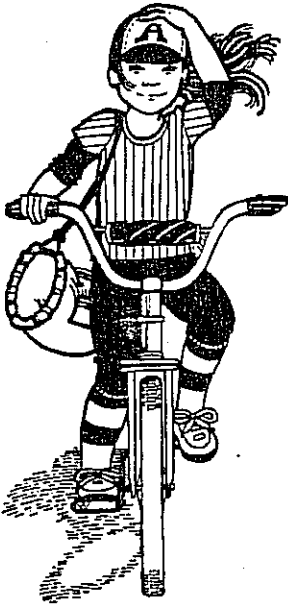
Like many other cities, Sunnyvale has "loop detectors" embedded in the roadways. These loop detectors, which detect the metal in automobiles, transmit information regarding the presence of vehicles to the traffic signal. When an automobile is situated directly over the loops, the signal knows to activate the green cycle. Sunnyvale has a policy to consistently place the loop detectors in the middle of the lane adjacent to the stop bar. Specific markings are not usually necessary because the loops are always in the same

place. Usually the cuts in the pavement where the loop is located are an easy way to find the loop's location (see illustration).

As part of its program to improve bicycle facilities, the City has recently instituted a policy to install a special type of loop detector, which is sensitive to bicycles. These loops are being placed at intersections where new construction or roadway modifications are taking place. In order for bicycles to be detected, they should be placed directly over the edges of the loop or along the sensing bar in the center of the loop.



CHILD SAFETY PROGRAMS



Programs to ensure the safety of children riding to school receive significant time, effort and money as part of Sunnyvale's bicycle program. The Parks and Recreation Department is responsible for putting on bike rodeos, while the Public Safety Department is responsible for Sunnyvale's safety education and correctional programs. Although the bike safety programs are currently aimed at schoolchildren, safe riding practices by cyclists of all ages is a goal of Sunnyvale's bicycle program.

PARKS AND RECREATION DEPARTMENT: Bike Rodeos

The City's Recreation Division has bike rodeos for elementary school children which are both fun and instructional. These occur once or twice a year at the request of the schools and are designed to teach second and third grade children basic bicycling skills. The Parks and Recreation and Public Safety Departments also encourage the participants to register and get a license for their bikes.



PUBLIC SAFETY: Educational Programs "Safe Way to School" Program

The Public Safety Department and Sunnyvale School District sponsor the "Safe Way to School" program, a general safety education program for kindergarten through third graders. Because the school districts prohibit children this young from riding their bicycles to school, the children are taught general principles of how to get safely to and from school. Public Safety puts on an annual presentation with an emphasis on pedestrian, skateboard, and bicycle safety and stranger identification. The children get to meet police officers in a positive environment where being taught a good lesson and having fun are combined.

Bicycle Safety Program

For older children, the annual Bicycle Safety Program reaches every 4th, 5th and 6th grade school child in the City. For fiscal year 1991, 3,200 children were taught advanced bicycle safety principles, with an emphasis on proper procedures at intersections, hand signaling, riding in traffic and the importance of wearing a helmet. As a corollary to this program, "parents guides," which describe the school's policies for walking or biking to school, are available from the Sunnyvale School District, as are handouts from the Traffic Engineering Division describing crosswalks adjacent to the school sites.

PUBLIC SAFETY: Correctional Programs Juvenile Traffic Safety Diversion Program

The Juvenile Traffic Safety Diversion Program is a program designed to reduce injury accidents involving skateboards, bicycles and pedestrians. Juvenile first-time offenders who have violated traffic safety laws have a choice of completing a one-hour Public Safety seminar with their parent or guardian which removes the citation from their record, or having their citation referred to Juvenile Court. The seminar is designed to instruct the student in the reasons for traffic rules and the possible consequences of breaking those rules. Second-time offenders must go to Juvenile Traffic Court with a parent or guardian. The program has been very successful. In 1990-1991, there were 557 first-time offenders, but only 41 second-time offenders. In 1991-1992 to date there have been 313 citations and only 9 repeat offenders. The Juvenile Traffic Safety Diversion Program appears to be very effective in deterring juvenile traffic violations.

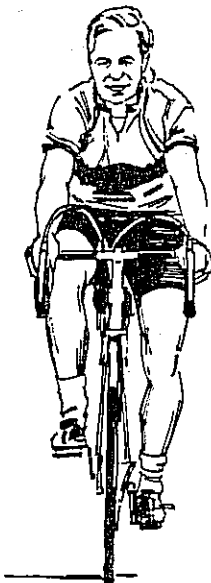


REGIONAL PROGRAMS

There are several public and private bodies within Santa Clara County that have operational policies which encourage bicycling, including the Santa Clara County Transportation Agency and Southern Pacific Railroad Company. Sunnyvale's goal has been to ensure that its standards are consistent with those of other jurisdictions. A number of jurisdictions also have planning programs which facilitate and encourage bicycling.

Operational Policies

In addition to now allowing bicycles on all County Expressways, the Santa Clara County Transportation Agency has recently instituted a program to carry bicycles on all 81 bus routes and the Light Rail system seven days a week. Each bus will accommodate up to two bicycles and each rail vehicle up to four bicycles at the driver's discretion when passenger loads are light. The bicycle must be no larger than 80 inches long by 48 inches high and must be kept in the rear of the bus or the light rail vehicles. Additional bicycles may be allowed on board at the driver's discretion. Some buses have specially designed exterior bike racks which can carry two bicycles at a time. Currently, only Route 300, which is a bonus route between Alum Rock and Stanford University, has buses with exterior bike racks.



CalTrain commuter train service completed a Bicycle-on-Train Feasibility Study in 1987 which explored the possibility of allowing bicycles on CalTrain. The proposed program would allow a limited number of bikes on board CalTrain during off-peak periods. Implementation of this program has been delayed because of liability concerns raised by SP. Currently, only collapsible bicycles are allowed on CalTrain. It is possible, however, that when the new operator for CalTrain is put into place that the Bicycle-on-Train Program can be implemented.⁴



Planning Programs

The most important development in the field of planning for bicycles in Santa Clara County is the formation of the Congestion Management Agency (CMA). Before the formation of the CMA, a coalition of cities formed the Golden Triangle Task Force, whose job it was to investigate the interrelationship of traffic congestion and the location of job sites and housing within the County. The Task Force concluded that there is a direct correlation between a city's levels of traffic congestion and air pollution and the distance employees had to drive to get to their jobs. The problem is exacerbated by the number of commuters who drive alone to their jobs.

The Congestion Management Agency is a legislatively-mandated, interjurisdictional body whose members represent the cities and County of Santa Clara County. One of the primary goals of the CMA is the reduction of the numbers of drive-alone commuters.

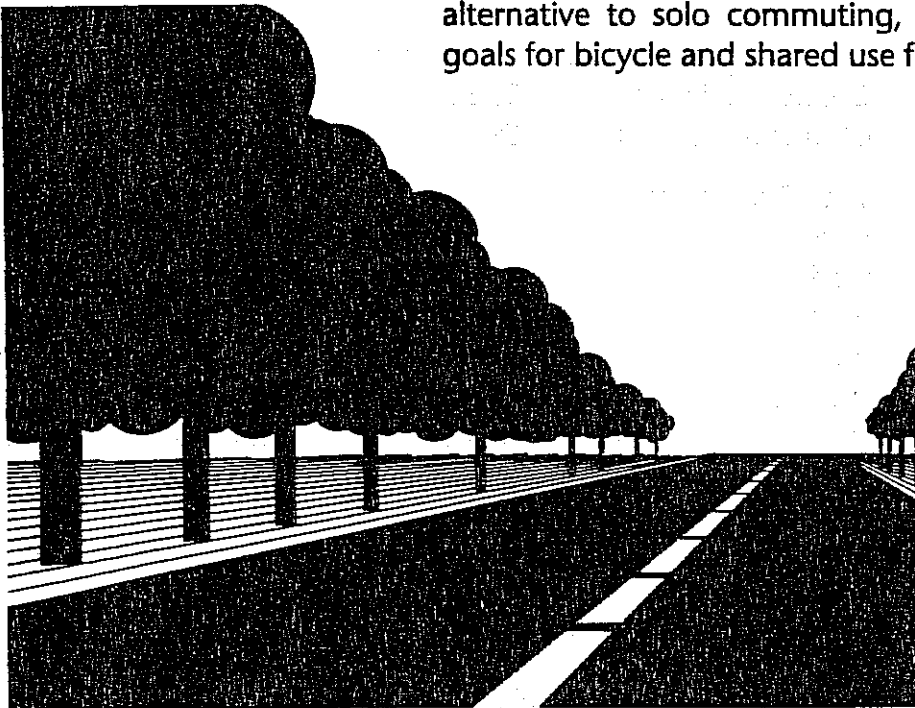
The Transportation Demand Management (TDM) Ordinance which was adopted by the member cities provides a basic framework for creating progressively more advanced trip reduction programs at the work site. As part of an initial employer-based program, the Ordinance encourages simple trip reduction strategies such as encouraging ridesharing, bicycling, and the use of transit. In the future, more advanced trip reduction strategies such as Site-Design Guidelines may be added to the basic requirements of the Ordinance.⁵ The Site Design Guidelines, while still lacking approval from CMA members, promises to be an effective tool in re-shaping the design of a building site so that it is more transit, pedestrian and bicycle-friendly.

The Bay Area Air Quality Management District (BAAQMD) is another regional agency which is closely involved in the State's efforts to improve air quality by reducing drive-alone commuting. One of the most important tangible measures for a project's impact upon air quality is traffic Level-of-Service (LOS). If a project worsens the LOS at an intersection below level "E," then the city or developer must create a "Deficiency Plan" in order to get the project approved. (Deficiency Plans are designed to improve transportation operations and improve air quality on the overall transportation system as compensation for specific locations which fall below the CMP LOS standards.)



In October 1991, BAAQMD issued a staff proposal for a "List of Programs, Actions, and Improvements for Inclusion in Deficiency Plans," which cities can use for their mitigation strategies. The proposal includes the encouragement of transit and bicycle integration, bicycle lockers and racks at Park and Ride lots, and bicycle facilities (clothes lockers and showers) at developments. If adopted, these measures will provide a regional model for encouragement of the use of bicycles and transit for commute trips.

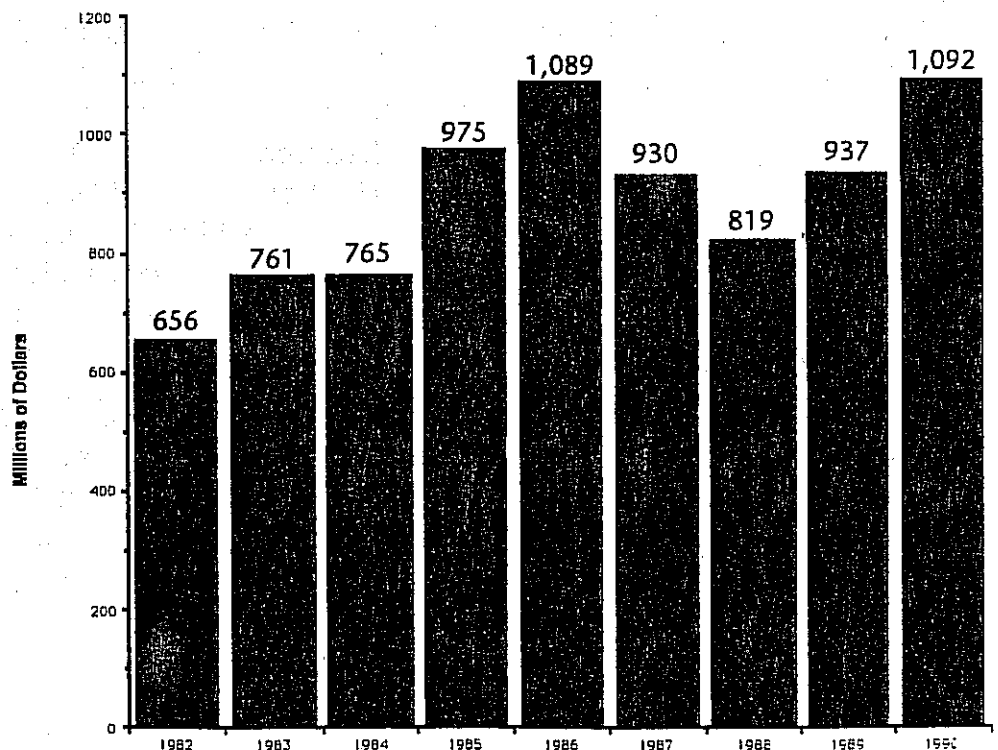
Regional support of bicycling also extends to the planning level in documents such as the SCCTA's T-2000 and T2010, an update of T-2000. These documents provide support for bicycling as an alternative to solo commuting, and set a number of ambitious goals for bicycle and shared use facilities in Santa Clara County.



BICYCLE USAGE AND ACCIDENTS

Judging by sales of bicycles, bicycle riding is a pleasurable pastime which has grown greatly in popularity in the past decade. From a figure of \$656 million in 1982, sales of bicycles nationwide climbed to \$1.1 billion in 1986, declined in 1987 and 1988, rose again in 1989 and totalled \$1.2 billion in 1990.

Annual Bicycle Sales in the United States 1982-1990



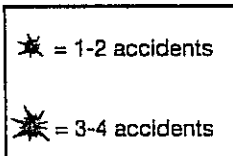
Source: National Sporting Goods Association, 1991

- Nationwide, in 1990, 24.6% of the population age 7 and older rode a bicycle 6 times or more during the year.
- In Santa Clara County in 1990, 37% of the population age 7 and older rode a bicycle 6 or more times during the year. As a comparison, 33% of the population of Alameda and Contra Costa Counties rode a bicycle 6 or more times per year.³

Unfortunately, more bike riders on busy streets means a higher probability of bicycle accidents. Between 1984 and 1991 there were an average of 93 reported bicycle accidents per year in the City of Sunnyvale. The map on page 33 shows the accident locations. The table on page 34 shows the streets and intersections which had the highest number of bicycle accidents.

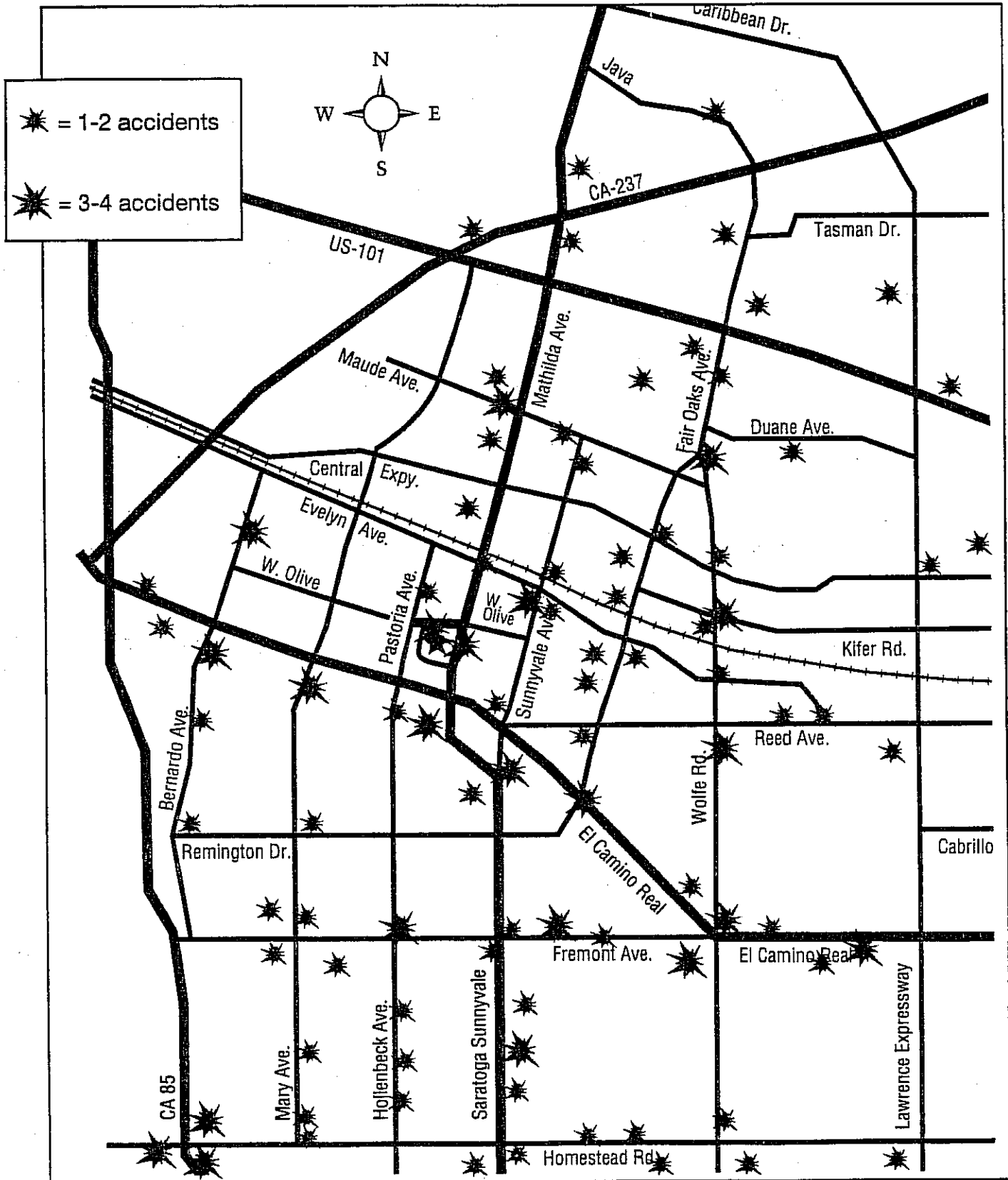
Bike Accidents in Civic Center

January 1990 – December 1991



32

Bike Accidents During Two-Year Period: January 1990–December 1991



Total Bicycle Accidents by Street

Two-Year Period:

January 1990 – December 1991

EAST-WEST STREETS*

El Camino Real.....	26
Fremont Ave.	18
Homestead Road	17
Evelyn Ave.	9
Remington Dr.	8
Old San Francisco Road	8
Arques Ave.	5
Duane Ave.	5
Central Expwy.	4
Maude Ave.	2

NORTH-SOUTH STREETS*

Saratoga-Sunnyvale/ Mathilda Ave	24
Wolfe Road	18
Fair Oaks Ave.	15
Mary Ave.	15
Bernardo Ave.	12
Hollenbeck	9
Lawrence Expwy.	4

*Figures reflect double-counting at intersections.

INTERSECTIONS WITH THE MOST BICYCLE ACCIDENTS

Homestead & Bernardo	4
El Camino & Remington/Fair Oaks.....	4
El Camino & Wolfe/Fremont & Wolfe*	4
El Camino & Mary	4
Fremont & Hollenbeck.....	3
El Camino & Bernardo	3
El Camino & Cezanne.....	3
Mathilda & Olive	3

*These two intersections were treated as one location, due to very close proximity.

SECTION II

GENERAL ASSUMPTIONS

Because it is likely that bicycle riding will continue to grow as a recreational activity and as a mode of transportation, Sunnyvale expects that bicycle travel demand will rise, and that a corresponding increase in facilities which can accommodate cycling will be necessary.

The need to reduce air pollution and traffic congestion as part of the County's Congestion Management Program will focus attention on cycling as an alternative to drive-alone commuting.

As cities and private sector developers begin to consider the needs of cyclists in their site design guidelines, bicycle commuting will become more attractive, convenient and safe.

The City will continue to improve bicycle facilities wherever feasible as part of its ongoing capital improvement projects and development review process.



GOALS, POLICIES AND ACTION STATEMENTS

MISSION STATEMENT

The goal of the Bicycle Plan is to encourage bicycling at the local, subregional and regional levels. Safe and accessible bicycle and shared roadway facilities will help clean up the air, reduce traffic congestion and preserve our natural resources. At the local level, this goal can be accomplished by maintaining a system of bike-ways which is safe and accessible while balancing the needs of all segments of the bicycling community. At a sub-regional level, this can be accomplished through participation in traffic congestion reduction programs which are occurring throughout the County and Bay Area and by encouraging linkages between bicycle facilities in South Bay cities. The City of Sunnyvale will continue to encourage bicycling for recreational, commuting, school and shopping trips.

Goal BP.A

Cycling for recreation, commuting, and travel to school and shopping shall be encouraged.

Policy BP.A1: The City of Sunnyvale shall facilitate bicycling through its transportation planning process.

Action Statements

BP.A1.a: A new map showing bike paths, routes and lanes and their suitability ratings should be published periodically.

BP.A1.b: Prepare a Bicycle Capital Improvements Projects (CIP) list for Sunnyvale and/or TDA Article 3 funding cycle.



Policy BP.A2:

BP.A1.c: Support Countywide adoption of Transportation Demand Management (TDM) Site Design Guidelines where developers provide appropriate design and support facilities to encourage cycling.

BP.A1.d: If not proposed County-wide, encourage adoption of Site Design Guidelines for the City regardless of actions taken by CMA.

BP.A1.e: Establish a program to encourage bike support facilities in existing land uses, with the City taking the first steps by providing bike support facilities at City facilities where needed.

BP.A1.f: Coordinate the City's bicycle plan with the overall County plan and the plans of our neighboring jurisdictions.

Facilitate access of bicycles to buses, light rail and heavy rail. Improve linkages among different transportation modes.

Action Statement

BP.A2.a: Explore expansion of "bikes on buses" program and re-open feasibility study of bicycles on CalTrain.

Policy BP.A3:

Develop means of accommodating bike access near parks, flood control districts, utility facilities and other institutional uses.

Action Statements

BP.A3.a: Research and assess the feasibility of developing a system of off-street bicycle trails utilizing flood channels, utility rights-of-way, and other linear parcels.

BP.A3.b: Explore further opportunities to develop or enhance the area along the Hetch Hetchy Aqueduct as a bicycle trail and to study the feasibility of a bicycle route to link the Baylands Park with residential areas south of Highway 101.

BP.A3.c: Explore the joint use of Santa Clara Valley Water District-owned land for trail purposes.

BP.A3.d: Participate in planning of the Regional Bay Trail to assure access from Baylands Park.

BP.A3.e: Explore the feasibility of allowing access through City parks on a park-by-park basis.

BP.A3.f: Explore the feasibility of improving amenities such as lighting, water stations, landscaping and others along bike paths and in City parks.

Policy BP.A4: BP.A4: Study alternatives for improving linkages between employment and residential areas.

Action Statement

BP.A4: Study options to provide more space for bicycles along major north-south streets such as Mathilda Avenue, Wolfe Road, Fair Oaks Avenue and Lawrence Expressway.

Goal BP.B

Provide for and maintain a safe and effective system of bikeways and shared roadway facilities suitable for bicycles.

Policy BP.B1: Design a program to maintain roadways and bikeways suitable for bicycle use.



Action Statements

BP.B1.a: Correct obstructions to bicycles on our roadway system through on-going maintenance programs.

BP.B1.b: Continue sweeping all roadways approximately every two weeks.

BP.B1.c: Mark and sign bike lanes, paths and routes where appropriate.

BP.B1.d: Investigate modifying existing City ordinance to allow adult cyclists to ride on sidewalks when auto lane widths or other road conditions are prohibitive.

Policy BP.B2: Consider cycling needs in future road projects.

Action Statements

BP.B2.a: Provide for bicyclists as part of road widenings, new developments or property redevelopment, wherever feasible. Notify City Council if providing for bicycles appears to be infeasible.

BP.B2.b: Install traffic signal detection which is sensitive to bicycles in future and retrofitted roadway and bike lane projects where appropriate.

Policy BP.B3: Pursue all available funding options for bicycle and pedestrian facility construction and improvements.

Action Statements

BP.B3.a: Using Capital Improvements Projects list as a guide, develop proposals for TDA Article 3 and Proposition 116 funding sources.

BP.B3.b: Staff will pursue all other possible funding sources for design, construction and maintenance of bicycle facilities.

Policy BP.B4: The City's new and existing bikeways shall conform to the latest Caltrans bicycle criteria per the most recent Caltrans Highway Design Manual.

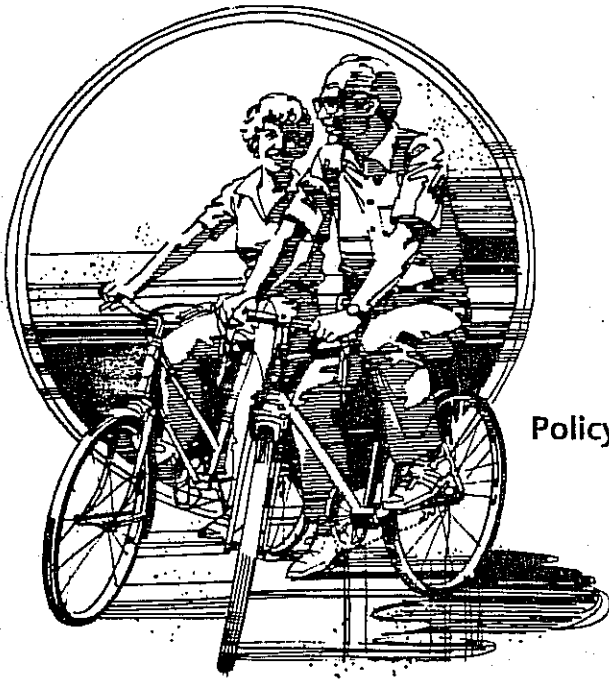
Action Statements

BP.B4.a: Design and maintain the City's bikeways and shared roadway facilities to Caltrans standards in the most recent Caltrans Highway Design Manual.

Goal BP.C

Make provisions for education about the rights and responsibilities of cyclists and motorists.

Policy BP.C1: Maintain an effective bicycle education program for all our citizens.



Action Statements

BP.C1.a: Continue having Public Safety and Traffic Engineering provide education in our schools, such as the "Safe Way to School" and the Bicycle Safety programs.

BP.C1.b: Continue providing bicycle education through the use of bike rodeos like those put on by the Parks and Recreation Department.

BP.C1.c: Provide bicycling education and training necessary for Public Safety officers

Policy BP.C2:

Study the expansion of bicycle education and safety programs to include other segments of the public.

Action Statements

BP.C2.a: Study methods for educating motorists and cyclists about rights and responsibilities on the road.

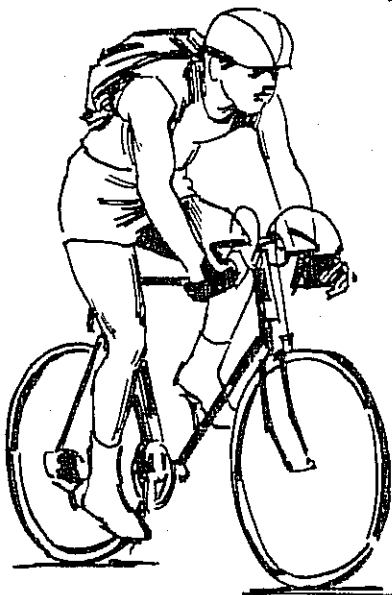
BP.C2.b: Investigate the provision of bicycle riding skills programs for various segments of the public.

Policy BP.C3:

Provide enforcement related to the rights and responsibilities of bicyclists.

Action Statement

BP.C2.a: Public Safety officers should cite violations by bicyclists or motorists in a manner that will promote greater education and safety, such as Public Safety's Juvenile Traffic Diversion Program.



PLAN UPDATE PROCEDURE

Annual Update

- Review possible changes in street suitability ratings.
- Review bicycle map and make appropriate modifications.
- Update programmed bicycle improvements in ten-year capital plan.

5-Year Update

- Reassess all goals, policies and action statements and make appropriate additions, deletions, and modifications to the Bicycle Plan.



APPENDIX A:

Footnotes

1. National Sporting Goods Association, 1991.
2. National Sporting Goods Association, *NSGA Sports Participation Study*, January-December 1990, page 14.
3. National Sporting Goods Association, *NSGA Sports Participation Study*, January-December 1990, page 14 and verbal conversations with Dan Kasen, October and November, 1991.
4. Nine-Year Plan, CalTrain, FY 1990-1991 to 1998-99.
5. Santa Clara County Draft CMP, 1989.

